

21-GP1-095 Economic Impact Data Sheet

Briefly summarize your proposal's primary economic impacts and benefits to building owners, tenants and businesses.

This proposal will deliver significant energy savings to buildings with indoor plant growth facilities.

With lighting for indoor plant growth and maintenance becoming regulated under the 2021-IECC, HVAC loads emerge as the next major opportunity to improve the energy efficiency of indoor horticulture. Of those, dehumidification is the load that is the most under/un-addressed in the existing WSEC.

This proposal is based on the requirements currently being adopted for the 2022 edition of Title 24. These requirements are also similar to requirements adopted in Denver, CO which require one of the following:

- Stand-alone dehumidification units with a minimum energy factor of 1.9 L/kWh,
- Chilled water system with heat recovery from the condenser coil to achieve dehumidification reheat, or
- Integrated HVAC system with heat recovery to achieve dehumidification reheat.

Denver also allows supplementary heat for dehumidification provided that the primary dehumidification system can fulfill at least 60 percent of the facility's peak dehumidification needs. The code also sets a minimum energy efficiency cooling equipment used in indoor growing facilities.¹

The proposed language gives multiple options for meeting the requirement, which allows indoor growing facilities to options to integrate compliance dehumidification systems into multiple different HVAC designs and does not force facilities into a single dehumidification strategy.

There is currently no national standard for indoor growing dehumidification equipment. 10 CFR, Part 430, Subpart B - Appendix X1 does provide a method for measuring the energy input for standalone dehumidifiers, so this has been leveraged to set the threshold for that type of equipment. However, standalone equipment will not be an appropriate strategy for all facilities, so the proposal also includes options to utilize recovered energy for dehumidification reheat needs.

¹ Denver GOV. 2019. Denver Gov.org. 04 25.

[https://www.denvergov.org/content/dam/denvergov/Portals/696/documents/Denver_Building_Code/2019-code-update/iecc/\(p54\)352_IECC_C406_PointsOptions.pdf](https://www.denvergov.org/content/dam/denvergov/Portals/696/documents/Denver_Building_Code/2019-code-update/iecc/(p54)352_IECC_C406_PointsOptions.pdf).

Provide your best estimate of the construction cost (or cost savings) of your code change proposal? (See OFM Life Cycle Cost [Analysis tool](#) and [Instructions](#); use these [Inputs](#). **Webinars on the tool can be found [Here](#) and [Here](#)**)

\$8.11/square foot (For residential projects, also provide [Click here to enter text.](#)/ dwelling unit)

Show calculations here, and list sources for costs/savings, or attach backup data pages

The CASE Report² found that incremental costs of \$8.11/sf of growing area. Total cost per square foot of building would vary based on how much of the facility is dedicated to non-growing uses. The savings per total building square footage would vary depending on the amount of space dedicated to non-growing uses.

Provide your best estimate of the annual energy savings (or additional energy use) for your code change proposal?

kWH/ square foot (or) 80-81 KBTU/ square foot

(For residential projects, also provide [Click here to enter text.](#)KWH/KBTU / dwelling unit)

Show calculations here, and list sources for energy savings estimates, or attach backup data pages

The CASE Report found that savings for CA climate zones 1,2 & 16 (the closest match to WA's climate zones), was 80-81 kbtu/sf/yr.³

List any code enforcement time for additional plan review or inspections that your proposal will require, in hours per permit application:

This proposal will add time for both plan review and site inspection. The additional time should be minimal as this requirement just adds one additional criterion to equipment that plan checkers and site inspectors are already checking.

² Final CASE Report: Controlled Environment Horticulture, California Statewide Codes and Standards Enhancement (CASE) Program, Oct. 2020, <https://title24stakeholders.com/wp-content/uploads/2020/10/2022-T24-NR-CEH-Final-CASE-Report.pdf>.

³ Final CASE Report: Controlled Environment Horticulture, California Statewide Codes and Standards Enhancement (CASE) Program, Oct. 2020, <https://title24stakeholders.com/wp-content/uploads/2020/10/2022-T24-NR-CEH-Final-CASE-Report.pdf>.